



PORTLAND HARBOR

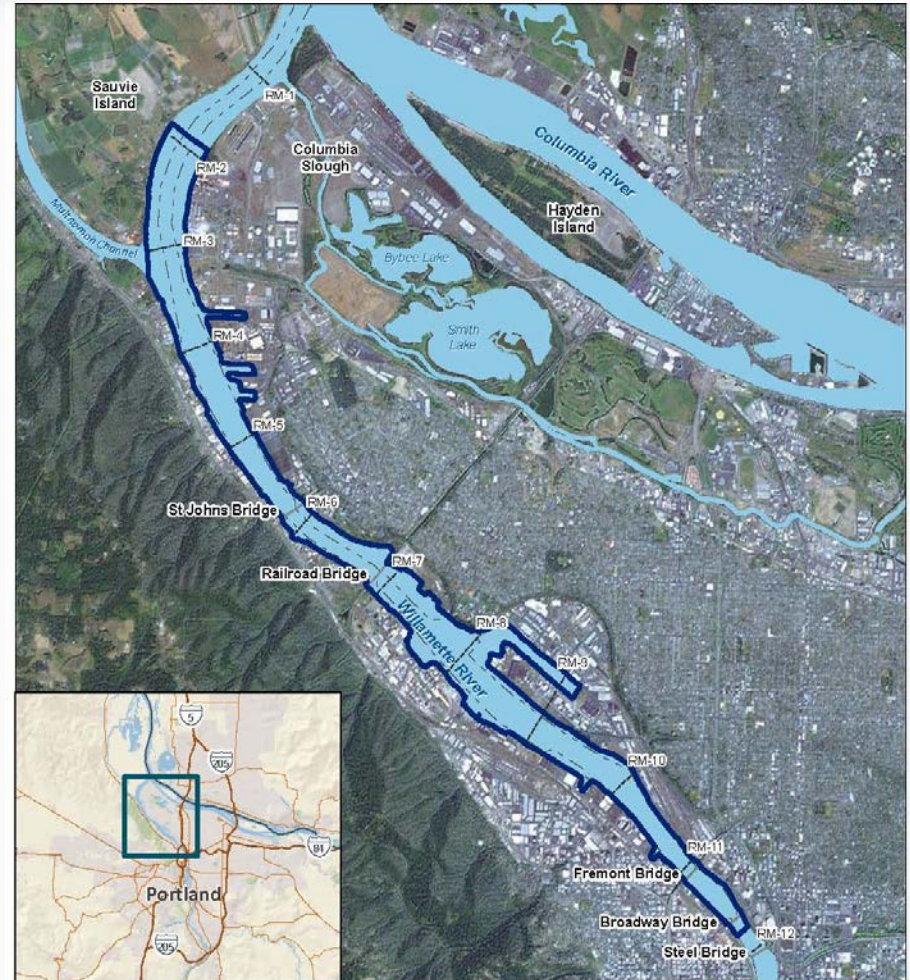
EPA Briefing

March 2016

Region 10

Sediment Site Remediation

- Challenges at this Site
 - Large and dynamic system
 - Reducing risk is complex
 - Large Area
 - Multiple Sources and Contaminants
- Standard cleanup technologies include a combination of dredging, capping, treatment, and natural recovery to reach Preliminary Remediation Goals (PRGs)
- Large sites mean large cleanup costs





Site Background Summary

- Numerous contaminants have been found within Portland Harbor at levels that present unacceptable risks to people and wildlife.
- PCBs, dioxin/furans, DDT, DDE and DDD and PAHs are the most prevalent contaminants
- Some locations in the river are more contaminated than others and EPA is focusing on these areas for the most aggressive cleanup technologies (dredging and capping).



What are the risks to people?

FISH ADVISORY

Atención Chú ý 注意 Внимани ໂປດອາບ

Fish from these waters may be harmful to eat, especially for children, pregnant or nursing women, and women of childbearing age.



SALMON



STEELHEAD



BASS



CATFISH



CARP

More information call 1-877-290-6767
www.healthoregon.org/fishadv

Oregon
Health
Authority

- Risks are 100 times the acceptable cancer risk and $> 10,000$ times non-cancer risk from eating contaminated fish
- Resident fish pose greatest risk
 - carp, bass, catfish
- Children and infants are most at risk



What are the impacts to wildlife and fish?



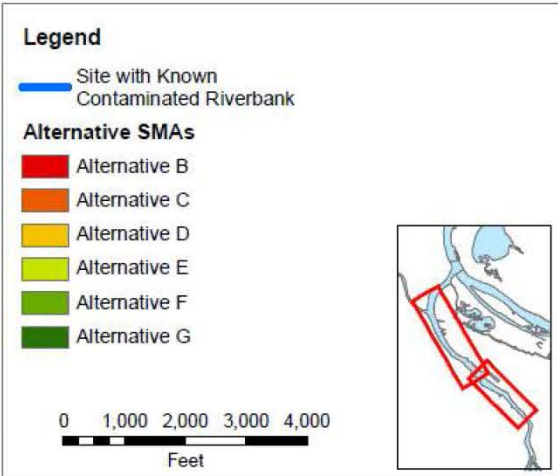
- **Organisms exposed to contaminants in river bottom**
 - Survival, reproduction and growth
- **Fish bioaccumulate contaminants through the food chain and direct exposure**
- **Birds and mammals feed on fish and bugs**

Feasibility Study Alternatives at a Glance



Alt	Dredge Volume (cu Yd)	Dredge Areas (Acres)	Cap Areas/No Dredging (Acres)	EMNR (Acres)	MNR (Acres)	Years to Const.	Cost (based on off-site disposal)
B	494,000 to 659,000	67	23	100	1,966	4*	\$451,830,000
C	592,000 to 790,000	80	30	97	1,948	5*	\$497,120,000
D	950,000 to 1,266,000	121	45	87	1,900	6*	\$653,970,000
E	1,653,000 to 2,204,000	188	66	60	1,838	7*	\$869,720,000
F	3,825,000 to 5,100,000	355	118	28	1,634	13*	\$1,371,270,000
G	6,221,000 to 8,294,000	525	185	19	1,391	19*	\$1,777,330,000
H	> 20,000,000			0	0	>60*	
I	1,419,000 to 1,892,000	150	64	60	1,876	7*	6

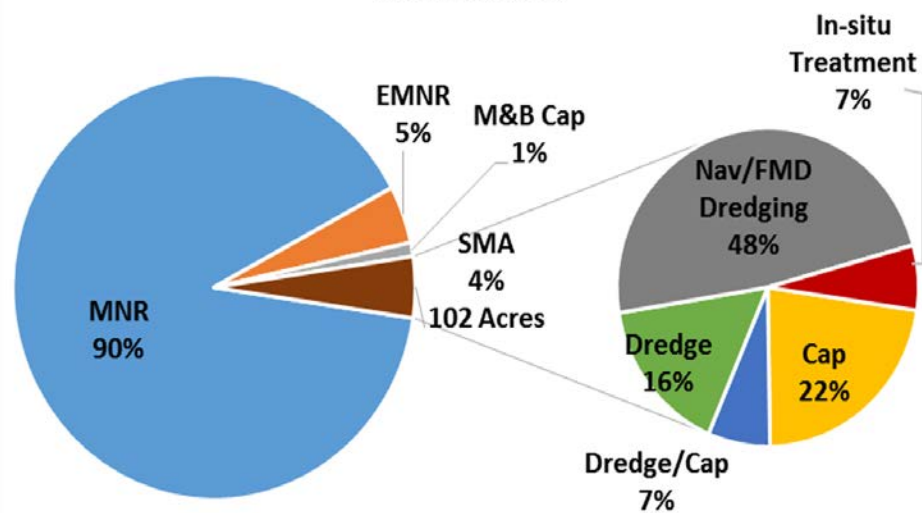
* Under QC review



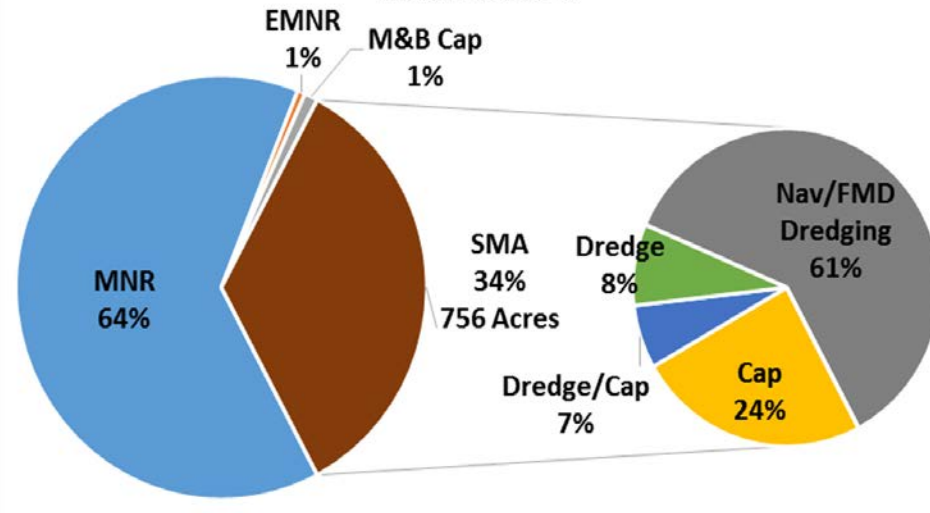


What are the Cleanup Options?

Alternative B



Alternative G





Evaluation Considerations

- Balance of aggressive action versus natural recovery
- Construction duration and impacts on environment and community
- Risk reductions achieved throughout the site and increased fish consumption rates
- Extent each alternative reduces toxicity, mobility or volume through treatment and addresses Principal Threat Waste (PTW)
- Location of caps in each alternative to limit restriction of future land uses
- Meet cleanup levels for ecological receptors and human health until cleanup levels are met



Process and Progress

- **January – March 2016** – Government to Government Tribal Consultations
- **February 8, 2016** – Completed Final Remedial Investigation (RI) Report
- **January – March 2016** – Extensive public outreach
- **April 2016** – Revise and issue Final Feasibility Study (FS), Proposed Plan (LWG has 14 days from issuance of PP to dispute the FS)
- **April – June 2016** – Formal Public Comment Period
- **May 2016** – Second round of Tribal Consultation
- **Early June 2016** – Start internal deliberation on Record of Decision
- **December 31, 2016** – Issue Record of Decision, including Responsiveness Summary